Notice No.1

Rules and Regulations for the Classification of Ships using Gases or other Low-flashpoint Fuels, July 2017

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: December 2017

Amendments to	Effective date	IACs/IMO implementation (if applicable)
Part A, Section 2	1 January 2018	1 January 2018
Part A-1, Sections 5, 6, 8 & 13	1 January 2018	1 January 2018

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Part A

2 General

2.2 Definitions

2.2.15 *Fuel containment system* is the arrangement for the storage of fuel including tank connections. It includes where fitted, a primary and secondary barrier, associated insulation and any intervening spaces, and adjacent structure if necessary for the support of these elements. If the secondary barrier is part of the hull structure it may be a boundary of the fuel storage hold space.

The spaces around the fuel tank are defined as follows:

.1 Fuel storage hold space is the space enclosed by the ship's structure in which a fuel containment system is situated. If tank connections are located in the fuel storage hold space, it will also be a tank connection space;
.2 Interbarrier space is the space between a primary and a secondary barrier, whether or not completely or partially occupied by insulation or other material; and
.3 Tank connection space is a space surrounding all tank connections and tank valves that is required for tanks with such connections in enclosed spaces.

LR 2.2-09 In order to minimise the extent of hazardous areas on open deck or to provide environmental protection to essential safety equipment (e.g. tank valves, safety valves etc.) related to tanks or both, the installation of a tank connection space on open deck is permitted.

LR 2.2-10 A tank connection space is permitted to contain equipment such as vaporisers or heat exchangers. Such equipment is considered to contain only potential sources of release, but not sources of ignition.

2.2.17 *Fuel preparation room* means any space containing pumps, compressors and/or vaporisers for fuel preparation purposes.

LR 2.2-11 Where the space containing equipment such as vaporisers or heat exchangers contains only potential sources of release, but not sources of ignition, then it may be considered a tank connection space and not a fuel preparation room.

Existing paragraphs LR 2.2-09 to LR 2.2-20 have been renumbered LR 2.2-12 to LR 2.2-23.

Part A-1

Specific Requirements for Ships Using Natural Gas as Fuel

5 Ship Design and Arrangement

5.4 Machinery space concepts

LR 5.4-02 Premixed engines using fuel gas mixed with air before the turbocharger shall be ESD protected.

LR 5.4-03 Regulations for gas turbines are located in 10.5.

5.8 Regulations for fuel preparation room design

Fuel preparation rooms shall be located on an open deck, unless those rooms are arranged and fitted in accordance with the regulations of this Code for tank connection spaces.

LR 5.8-01 Fuel preparation rooms, regardless of location, shall be arranged to safely contain any cryogenic leakages.

LR 5.8-02 The material of the boundaries of the fuel preparation room shall have a design temperature corresponding to the lowest temperature it can be subjected to in a probable maximum leakage scenario unless the boundaries of the space, i.e. bulkheads and decks, are provided with suitable thermal protection.

LR 5.8-03 The fuel preparation room shall be arranged to prevent surrounding hull structure from being exposed to unacceptable cooling, in case of leakage of cryogenic liquids.

LR 5.8-04 The fuel preparation room shall be designed to withstand the maximum pressure build up during such a leakage. The pressure relief venting via the vent mast shall be in accordance with the applicable requirements indicated in 6.7.2.

6 Fuel Containment System

6.7 Regulations for pressure relief system

6.7.3 Sizing of pressure relieving system

6.7.3.1 Sizing of pressure relief valves

(Part only shown)
6.7.3.1.1 PRVs shall have a combined relieving capacity for each liquefied gas fuel tank to discharge the greater of the following, with not more than a 20% rise in liquefied gas fuel tank pressure above the MARVS:

Figure 6.7.1

LR 6.7-02 For non-tapered prismatic tanks, L_{min}, is the smaller of the horizontal dimensions of the flat bottom of the tank. For tapered prismatic tanks, as would be used for the forward tank, L_{min} is the smaller of the length and the average width.

LR 6.7-03 For prismatic tanks whose distance between the flat bottom of the tank and bottom of the hold space is equal to or less than $L_{min}/10$:

A = external surface area minus flat bottom surface area.

LR 6.7-04 For prismatic tanks whose distance between the flat bottom of the tank and bottom of the hold space is greater than $L_{min}/10$:

A = external surface area.

Existing paragraph LR 6.7-02 has been renumbered LR 6.7-05.

6.9 Regulations for the maintaining of fuel storage condition

6.9.1 Control of tank pressure and temperature

(Part only shown)
6.9.1.1 With the exception of liquefied gas fuel tanks designed to withstand the full gauge vapour pressure of the fuel under conditions of the upper ambient design temperature, liquefied gas fuel tanks' pressure and temperature shall be maintained at all times within their design range by means acceptable to the Administration, e.g. by one of the following methods:

LR 6.9-01 Liquefied gas fuel tank pressure and temperature shall be controlled and maintained within the design range at all times including after activation of the safety system required in 15.2.2 for a period of minimum 15 days. The activation of the safety system alone is not deemed as an emergency situation.

Existing paragraphs LR 6.9-01 to LR 6.9-02 have been renumbered LR 6.9-02 to LR 6.9-03.

8 Bunkering

8.3 Regulations for bunkering station

8.3.1 General

8.3.1.1 The bunkering station shall be located on open deck so that sufficient natural ventilation is provided. Closed or semi-enclosed bunkering stations shall be subject to special consideration within the risk assessment.

LR 8.3-01 The special consideration shall as a minimum include, but not be restricted to, the following design features:

- segregation from other areas on the ship;
- hazardous area plans for the ship;
- requirements for forced ventilation;
- requirements for leakage detection (e.g. gas detection and low temperature detection);
- safety actions related to leakage detection (e.g. gas detection and low temperature detection);
- access to bunkering station from non-hazardous areas through airlocks; and
- monitoring of bunkering station by direct line of sight or by CCTV.

Existing paragraphs LR 8.3-01 to LR 8.3-03 have been renumbered LR 8.3-02 to LR 8.3-04.

13 Ventilation

13.5 Regulations for machinery spaces

13.5.1 The ventilation system for machinery spaces containing gas-fuelled consumers shall be independent of all other ventilation systems.

LR 13.5-01 Spaces enclosed within the boundaries of machinery spaces (such as purifier rooms, engine-room workshops and stores) are considered an integral part of machinery spaces containing gas-fuelled consumers and, therefore, their ventilation system does not need to be independent of the ventilation system serving the machinery spaces.

13.8 Regulations for ducts and double pipes

13.8.2 The ventilation system for double piping and for gas valve unit spaces in gas safe engine-rooms shall be independent of all other ventilation systems.

LR 13.8-01 The ventilation system for double piping and gas valve unit spaces in gas safe engine-rooms may extend outside of the gas safe engine-rooms.

13.8.3 The ventilation inlet for the double wall piping or duct shall always be located in a non-hazardous area away from ignition sources. The inlet opening shall be fitted with a suitable wire mesh guard and protected from ingress of water.

LR 13.8-02 The ventilation inlet referred to in 13.8.3 shall always be located in open air.

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